PDR RID Report

Date Last Modified 4/12/95

Originator Gaylord, Arthur S. **Phone No** 413-545-2520

Organization Project Pilgrim, Univ. of Massachusetts

E Mail Address art@cs.umass.edu

Document CSMS Requirements Spec (304-CD-003-001)

Section 6.3.4.2 **Page** 6-31,32 **Figure Table** NA

RID ID PDR 205
Review CSMS
Originator Ref
Priority 2

Category Name Design-CSS **Actionee** HAIS

Sub Category

Subject Potential problems with sender queueing of messages

Description of Problem or Suggestion:

The functional requirements states that the message queue shall be local to the host originating the message. The rational for this is to reduce network traffic. While it is true that a single message worth of traffic can be saved relative a remote message queuing server, there are substantial consequences to this decision potentially negatively impact the overall reliability, performance, and security of the message passing service. Key among the problems are the need for the sender to maintain a significant amount of state concerning the message and the intended recipients of it. Relative to dedicated message queuing servers, client systems sending messages will typically be less reliable, have less long term storage capacity, and likely have poorer network connectivity. A system or network failure or asecurity breach at the sender node could comprise the efficient delivery to multiple recipients. Futhermore in a complex LAN/WAN topology, the sender is generally not in the position to know how to optmize the use of the network links, whereas message queueing server could be optimally placed and easily kept informed of preferred routing paths. Additionally for large messages consideration should be to separating the transmittal of the message data from the message metadata (header information).

Originator's Recommendation

Consider changing this design to use message queueing servers. Sender queueing and transmittal of message should not be excluded.

GSFC Response by: **GSFC Response Date**

HAIS Response by: Forman **HAIS Schedule** 2/28/95

HAIS R. E. N. Hota **HAIS Response Date** 2/28/95

The intention of having a local message queue is to offload the message from the sender immediately. There are various ways this can be achieved: having a local message queue (on the senders machine); have a central message bus where all the messages go before transmitting them to the receivers, but a local sender queue (local buffering) which keeps the message locally until it is transmitted to the central bus. The design that CSMS has presented is logical at this point to return control back to the sender as soon as possible. As mentioned in the description of the RID, there are various other considerations that should be looked in to (performance and reliability) to have a local queue. CSS is currently evaluating several COTS products for message queueing services (DEC MessageQ, Peerlogic's PIPES, Project Pilgrim's PEN) and would use these considerations in the selection of these products and will provide a refined design by CDR.

Status **Closed** **Date Closed** **4/12/95** **Sponsor** **Broder**

****** **Attachment if any** ******